



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|-----------------------------|---------------------|------------------|
| 09/821,118 | 03/30/2001 | George Malcolm Swift Joynes | 3036/49818 | 3267 |

7590 07/16/2004

CROWELL & MORING LLP.
INTELLECTUAL PROPERTY GROUP
P.O. BOX 14300
washington, DC 20044-4300

EXAMINER

CHAU, COREY P

| ART UNIT | PAPER NUMBER |
|----------|--------------|
| 2644 | 9 |

DATE MAILED: 07/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|------------------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/821,118 | JOYNES, GEORGE MALCOLM SWIFT | |
| | Examiner | Art Unit | |
| | Corey P Chau | 2644 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 0/30/01.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-63 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-63 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 30 March 2001 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 4. | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 16, 17, 18, 42, 43, 44, 61, and 62 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The application recites in Claims 16, 17, 18, 42, 43, 44, 61, and 62; "a tracking device arranged to search for said transducer, to acquire a location of said transducer, and to track said location of said transducer, said tracking device being further arranged to communicate said location of said transducer to said measuring device". However, no details are given as to how the tracking device would communicate with measuring device, such as signal measurements used to reduce noise and thus one of ordinary skill in the art would be unable to actually make and use the invention. In this regards, the specification is merely an invitation to experiment.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 45 and 46 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention. Claim 45 depends on a cancelled claim; it is unclear as to what claim 45 should depend on and has not been further treated on its merits. Claim 46 depends on Claim 45 and has not been further treated on its merits.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 2, 3, 4, 5, 6, 8, 9, 10, 14, 15, 19, 20, 21, 22, 23, 24, 26, 27, 31, 32, 35, 36, 37, 41, 47, 48, 49, 52, 53, 56, 57, 58, 60, and 63 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5133017 to Cain et al. (hereafter as Cain).

7. Regarding Claim 1, Cain discloses a noise suppression system comprising a transducer (30) disposed at a first location (Figs. 1 and 2) and arranged to transduce sound substantially in an area into a signal which is measurable by a measuring device (24), said measuring device being disposed at said first location or at a second location (Figs. 1 and 2) and coupled to a sound cancellation device (16,18), said sound cancellation device being configured to generate a cancellation signal of approximately an equal intensity and opposite polarity to said measurable signal and to transmit said cancellation signal to said area thereby substantially reducing the amount of noise audible in said area (abstract; column 4, lines 6-27).

8. Regarding Claim 2, Cain discloses the first location is in or proximate to said area (Figs. 1 and 2).

9. Regarding Claim 3, Cain discloses the second location area is remote from said area (Figs. 1 and 2).

10. Regarding Claim 4, Cain discloses the area is proximate to a human ear (Figs 1 and 2).

11. Regarding Claim 5, Cain discloses a noise suppression system comprising a transducer (i.e. head of an individual) disposed at a first location (Figs. 10 and 11) and arranged to transduce sound substantially in an area into a signal which is measurably by a measuring device (492a-f), said measuring device being disposed at said first location or at a second location (Figs. 10 and 11) and coupled to a sound cancellation device (416,418), said sound cancellation device being configured to generate a cancellation signal of approximately an equal intensity and opposite polarity to said measurably signal and to transmit said cancellation signal to said area thereby substantially reducing the amount of noise audible in said area (abstract; column 4, lines 6-27; column 7, lines 25-65). Cain also discloses that by detecting the amplitude of the audio signal produced by emitter (i.e. transducer) (490) at the various points where detectors (i.e. measuring device) (492a-f) are positioned, a relatively simple analysis such as locating the detector receiving the minimum amplitude will reveal the position of the head of an individual (i.e. the transducer is human skin) (column 7, lines 25-65).

12. Regarding Claim 6, Cain discloses the emitter and detectors is utilized to reveal the position of the head of an individual. It is inherent that an ear is part of the head. Therefore the human skin is part of a human pinna.

13. All elements of Claims 8, 9, 10, 14, and 15 are comprehended by Claim 1.

Claims 8, 9, 10, 14, 15 are rejected for the reasons stated above apropos to Claim 1.

14. All elements of Claim 19 are comprehended by Claim 1. Claim 19 is rejected for the reasons stated above apropos to Claim 1 (Cain discloses a plurality of microphones in the microphone assembly 26 that detects noise) (Figs. 1, 2, and 3; column 1, line 64 to column 2, line 3; column 3, lines 64-68).

15. All elements of Claim 20 are comprehended by Claim 19. Claim 20 is rejected for the reasons stated above apropos to Claim 19.

16. Regarding Claim 21, Cain discloses a noise cancellation controller (i.e. sound cancellation device) includes processing means to select a predominant frequency component of the required cancellation signal (i.e. a filter disposed between said measuring device and said cancellation device and arranged to pass a range of frequency) (claim 15).

17. Regarding Claim 22, Cain discloses the area is in a vehicle (column 3, lines 33-36).

18. Claim 23 is essentially similar to Claim 1 and is rejected for the reasons stated above apropos to Claim 1.

19. Regarding Claim 24, Cain discloses measuring background sound remote to said area, and using said measurement of background sound to facilitate the reducing the

amount of noise audible in said area (Figs. 1, 2, and 3; column 1, line 64 to column 2, line 3; column 3, lines 64-68).

20. Regarding Claim 26, Cain discloses noise suppression system for reducing undesired noise for an individual (i.e. apparatus for reducing noise in an area proximate an ear of an observer) (Figs. 1 and 2), comprising: a transducer (416,418) arranged to transduce noise sound substantially in said area into a signal (Figs. 9, 10, and 11); a measuring device (490) arranged to measure the signal from the transducer; a sound cancellation device (416,418) configured: to receive information from the measuring device; to generate a cancellation sound of approximately an equal intensity and opposite polarity to said noise sound (abstract); and to transmit said cancellation sound to said area thereby substantially reducing the amount of noise sound audible in said area by said observer, characterized in that: the transducer is mounted on the body of the observer (Figs. 10 and 11; column 7, lines 18-65), the measuring device is remote from the transducer (Figs. 10 and 11), and the transducer (416,418) wire-lessly transmits the signal, representing sound in the vicinity of the ear canal, to the measuring device (490) (Figs. 10 and 11).

21. Regarding Claim 27, Cain discloses the wire-less transmission of the signal takes the form of light reflected from the transducer, and said measuring device is an optical device (column 7, lines 18-65).

22. Claims 31 and 32 are essentially similar to Claim 6 and are rejected for the reasons stated above apropos to Claim 6.

Art Unit: 2644

23. All elements of Claim 35 are comprehended by Claim 26. Claim 35 is rejected for the reason stated above apropos to Claim 26.

24. All elements of Claim 36 are comprehended by Claim 26. Claim 36 is rejected for the reason stated above apropos to Claim 26.

25. Claim 41 is essentially similar to Claim 21 and is rejected for the reasons stated above apropos to Claim 21.

26. Claim 47 is essentially similar to Claim 26 and is rejected for the reasons stated above apropos to Claim 26.

27. Claim 48 is essentially similar to Claim 27 and is rejected for the reasons stated above apropos to Claim 27.

28. All elements of Claim 49 are comprehended by Claim 27. Claim 49 is rejected for the reason stated above apropos to Claim 27.

29. Claim 52 is essentially similar to Claim 5 and is rejected for the reasons stated above apropos to Claim 5.

30. Claim 53 is essentially similar to Claim 6 and is rejected for the reasons stated above apropos to Claim 6.

31. Claim 57 is essentially similar to Claim 36 and is rejected for the reasons stated above apropos to Claim 36.

32. Regarding Claim 26, Cain discloses noise suppression system for reducing undesired noise for an individual (i.e. apparatus for reducing noise in an area proximate an ear of an observer) (Fig. 15), comprising: a transducer (836) arranged to transduce noise sound substantially in said area into a signal (Fig. 15); a measuring device (824)

arranged to measure the signal from the transducer; a sound cancellation device configured: to receive information from the measuring device; to generate a cancellation sound of approximately an equal intensity and opposite polarity to said noise sound (i.e. a noise cancellation controller to receive the output of the audio input means and generate said electrical cancellation signal for the loudspeaker actuator (abstract); and to transmit said cancellation sound to said area thereby substantially reducing the amount of noise sound audible in said area by said observer, characterized in that: the transducer is mounted on the body of the observer (Fig. 15), the measuring device is remote from the transducer and the transducer wire-lessly transmits the signal, representing sound in the vicinity of the ear canal, to the measuring device (Fig. 15; column 8, lines 55-68; claim 24).

33. All elements of Claim 35 are comprehended by Claim 26. Claim 35 is rejected for the reasons stated above apropos to Claim 26.

34. All elements of Claim 37 are comprehended by Claim 26. Claim 37 is rejected for the reasons stated above apropos to Claim 26.

35. Claim 56 is essentially similar to Claim 35 and is rejected for the reasons stated above apropos to Claim 35.

36. Claim 58 is essentially similar to Claim 37 and is rejected for the reasons stated above apropos to Claim 37.

37. Claim 60 is essentially similar to Claim 21 and is rejected for the reasons stated above apropos to Claim 21.

38. Claim 63 is essentially similar to Claim 19 and is rejected for the reasons stated above apropos to Claim 19.

Claim Rejections - 35 USC § 103

39. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

40. Claims 38, 39, 40, and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5133017 to Cain.

41. Regarding Claim 38, Cain discloses a sensor disposed near an ear of an observer, but does not disclose the transducer comprises a sensor embedded in an item of jewelry for wearing on the ear of the observer. However it would have been obvious to one having ordinary skill at the time the invention was made to had a sensor embedded in a object near the ear of the observer, such as jewelry that can be wore on an observer's ear.

42. Claim 39 is essentially similar to Claims 26 and 38 and is rejected for the reasons stated above apropos to Claims 26 and 38.

43. Claim 40 is essentially similar to Claims 26 and 38 and is rejected for the reasons stated above apropos to Claims 26 and 38.

44. Claim 59 is essentially similar to Claim 38 and is rejected for the reasons stated above apropos to Claim 38.

45. Claims 7, 28, 29, 30, 50, and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5133017 to Cain in view of U.S. Patent No. 5359887 to Schwab et al. (hereafter as Schwab).

46. Regarding Claim 7, Cain does not expressly disclose the transducer includes pressure sensitive paint. However it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide such a pressure sensitive paint to the transducer in order to enhance measurement of pressure, as taught Schwab.

47. Claim 28 is essentially similar to Claim 7 and is rejected for the reasons stated above apropos to Claim 7.

48. Regarding Claim 29, Cain does not expressly disclose the transducer comprises a pressure sensitive paint applied to the skin of the observer. However it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide such a pressure sensitive paint to the skin of the observer in order to enhance measurement of pressure, as taught Schwab.

49. All elements of Claim 30 are comprehended by Claim 29. Claim 30 is rejected for the reason stated above apropos to Claim 29.

50. Claim 50 is essentially similar to Claim 28 and is rejected for the reasons stated above apropos to Claim 28.

51. Claim 51 is essentially similar to Claim 30 and is rejected for the reasons stated above apropos to Claim 30.

52. Claims 11, 12, 13, 33, 34, 54, and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5133017 to Cain in view of U.S. Patent No. 6055080 to Furstenau et al. (hereafter as Furstenau).

53. Regarding Claim 11, Cain discloses plurality of microphones, but only generally; no specific hardware is taught. Therefore it would have been obvious to one having ordinary skill in the art to seek known microphones. Furstenau for example, discloses optical microphone including a light source, a fiber optic cable and a Fabry-Perot interferometer with two reflectors (abstract). It would have been obvious to one having ordinary skill in the art to utilize any known microphones. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Cain with the teaching of Furstenau to utilize an optical microphone including a light source, a fiber optic cable and a Fabry-Perot interferometer with two reflectors (i.e. measuring device is an optical device).

54. Regarding Claim 12, Cain as modified discloses the optical microphone including an interferometer (i.e. the optical device is an interferometer).

55. All elements of Claim 13 are comprehended by Claim 11. Claim 13 is rejected for the reasons stated above apropos to Claim 11 (optical microphone includes a light source) (abstract; column 1, lines 44-52).

56. Claim 33 is essentially similar to Claim 12 and is rejected for the reasons stated above apropos to Claim 12.

57. Claim 34 is essentially similar to Claim 13 and is rejected for the reasons stated above apropos to Claim 13.

58. Claim 54 is essentially similar to Claim 12 and is rejected for the reasons stated above apropos to Claim 12.

59. Claim 55 is essentially similar to Claim 13 and is rejected for the reasons stated above apropos to Claim 13.

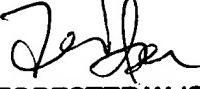
Conclusion

60. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Corey P Chau whose telephone number is (703)305-0683. The examiner can normally be reached on Monday - Friday 9:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W Isen can be reached on (703)305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

July 12, 2004


FORESTER W. ISEN
SUPERVISORY PATENT EXAMINER